

5/5/2017

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INITIAL REVIEW EXPOSURE REPORT (IRExR)**Chemical ID: P-17-0281****Reviewer: Mottl/HDJ****Results Table: Dose, Concentration, and Days Exceeded Results Summary**

Exposure Scenario ¹	Water						Landfill	Stack Air		Fugitive Air	
Release activity(ies) ² ; exposure calculation(s) ³	Drinking Water		Fish Ingestion		7Q10 ⁴ CC =	PDM Days Exceeded	LADD	ADR (24-hr conc.)	LADD (Annual conc.)	ADR (24-hr conc.)	LADD (Annual conc.)
	ADR	LADD	ADR	LADD							
	mg/kg/day	mg/kg/day	mg/kg/day	mg/kg/day	µg/l	# Days	mg/kg/day	mg/kg/day (µg/m ³)	mg/kg/day (µg/m ³)	mg/kg/day (µg/m ³)	mg/kg/day (µg/m ³)
PROC: Max ADR	1.14E-02	---	---	---	---	---	---	---	---	---	---
PROC: Max LADD	---	2.89E-05	---	---	---	---	---	---	---	---	---
USE1: Max ADR	3.70E-03	---	---	---	---	---	---	---	---	---	---
USE1: Max LADD	---	2.82E-05	---	---	---	---	---	---	2.11E-04 (2.73E+00)	---	---
USE2: Max ADR	2.79E-04	---	---	---	---	---	---	---	---	7.69E-02 (4.20E+02)	---
USE2: Max LADD	---	5.22E-07	---	---	---	---	---	---	---	---	---

¹ Exposure scenario titles consist of release activity followed by exposure calculation abbreviation.² Release activities are from engineering report's Manufacturing (Mfg), Processing (Proc) and Use release activity labels. Multiple release activities are combined in one exposure scenario if their releases occur at same location.³ Exposure calculations are Acute Dose Rate (ADR), Lifetime Average Daily Dose (LADD), and Probabilistic Dilution Model (PDM). There may be one, two, or all three exposure calculations per exposure scenario. CC is the aquatic concentration of concern.⁴ This column displays concentration values for the 7Q10 streamflow, which is defined as the average daily streamflow of the seven consecutive days of lowest flow within a ten year period.**Remarks:****PROC – POTW Industrialized****USE1 – POTW Industrialized****USE2 – POTW Industrialized**

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

Assessor: Mottl/HDJ

ENVIRONMENTAL RELEASES

Scenario#:1

Number of Release Sites: ■

Release Activity: PROC: Max ADR

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
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Total Releases:

■	■	■	■
(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:

■	■	■	■
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Per Site Release:

■	■	■	■
(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 1

Number of Sites: ■

RELEASE ACTIVITY: PROC:
Max ADR

SIC-CODE DESCRIPTION: POTW (Indust., includes POTWs which receive ind. disch.)

SIC-CODE (S): ■■■■■■

EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
90.00	■	40.	4.00	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER									
PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	288.00	123.84	78.18	66.05	13.89	32.30	51.16	60.56
ALL	10	39.60	13.29	7.76	7.57	101.01	300.98	515.46	528.40

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES						
Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
LADD _{pot}	3.98E-06	2.89E-05	mg/kg/day	0.00	0.00	mg/kg/day
LADC _{pot}	3.06E-04	2.22E-03	mg/L	0.00	0.00	mg/kg
Acute						
ADR _{pot}	1.22E-03	1.14E-02	mg/kg/day	0.00	0.00	mg/kg/day

SIC Code Comments:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

Assessor: Mottl/HDJ

ENVIRONMENTAL RELEASES

Scenario#:2

Number of Release Sites: ■

Release Activity: PROC: Max LADD

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
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Total Releases:

■	■	■	■
(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:

■	■	■	■
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Per Site Release:

■	■	■	■
(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 2

Number of Sites: 1

RELEASE ACTIVITY: PROC:
Max LADD

SIC-CODE DESCRIPTION: POTW (Indust., includes POTWs which receive ind. disch.)

SIC-CODE (S): 2812

EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
90.00	1	760.	76.00	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER									
PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	288.00	123.84	78.18	66.05	N/A	N/A	N/A	N/A
ALL	10	39.60	13.29	7.76	7.57	N/A	N/A	N/A	N/A

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES						
Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
LADD _{pot}	3.98E-06	2.89E-05	mg/kg/day	0.00	0.00	mg/kg/day
LADC _{pot}	3.06E-04	2.22E-03	mg/L	0.00	0.00	mg/kg
Acute						
ADR _{pot}	N/A	N/A	mg/kg/day	N/A	N/A	mg/kg/day

SIC Code Comments:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

Assessor: Mottl/HDJ

ENVIRONMENTAL RELEASES

Scenario#:3

Number of Release Sites: ■

Release Activity: USE1: Max ADR

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
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Total Releases:	■	■	■	■
	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:	■	■	■	■
Per Site Release:	■	■	■	■
	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 3

Number of Sites: ■

RELEASE ACTIVITY:USE1:
Max ADR

SIC-CODE DESCRIPTION: POTW (Indust., includes POTWs which receive ind. disch.)

SIC-CODE (S): ■■■■■■

EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
90.00	■	13.	1.30	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER									
PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	288.00	123.84	78.18	66.05	4.51	10.50	16.63	19.68
ALL	10	39.60	13.29	7.76	7.57	32.83	97.82	167.53	171.73

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES						
Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
LADD _{pot}	3.88E-06	2.82E-05	mg/kg/day	0.00	0.00	mg/kg/day
LADC _{pot}	2.98E-04	2.17E-03	mg/L	0.00	0.00	mg/kg
Acute						
ADR _{pot}	3.98E-04	3.70E-03	mg/kg/day	0.00	0.00	mg/kg/day

SIC Code Comments:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 4

Number of Sites ■

RELEASE ACTIVITY:USE1:
Max LADD

SIC-CODE DESCRIPTION: POTW (Indust., includes POTWs which receive ind. disch.)

SIC-CODE (S) ■■■■■■

EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
90.00	■	741.	74.10	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER									
PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	288.00	123.84	78.18	66.05	N/A	N/A	N/A	N/A
ALL	10	39.60	13.29	7.76	7.57	N/A	N/A	N/A	N/A

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES						
Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
LADD _{pot}	3.88E-06	2.82E-05	mg/kg/day	0.00	0.00	mg/kg/day
LADC _{pot}	2.98E-04	2.17E-03	mg/L	0.00	0.00	mg/kg
Acute						
ADR _{pot}	N/A	N/A	mg/kg/day	N/A	N/A	mg/kg/day

SIC Code Comments:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

INHALATION EXPOSURE ESTIMATES (POST-TREATMENT)
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SCENARIO #: 4 RELEASE ACTIVITY:USE1: Max LADD

RELEASE DESCRIPTION:

METHOD OF CALCULATION: Screen3

EXPOSED POPULATION: Adult

Number of Sites:	3.
Per Site Fugitive Release:	NA kg/site/day
Fugitive Release Days per Year:	NA days
% Removal via Fugitive Release:	0.00 %
Total Fugitive Release:	NA kg/yr
Max Annual Average Air Concentration (Fugitive):	0.00 $\mu\text{g}/\text{m}^3$
Max 24 Hour Average Air Concentration(Fugitive):	N/A $\mu\text{g}/\text{m}^3$
Per Site Stack Release:	741.00 kg/site/day
Stack Release Days per Year:	1.00 days
% Removal via Stack Release:	0.00 %
Total Stack Release:	2223.00 kg/yr
Max Annual Average Air Concentration (Stack):	2.73 $\mu\text{g}/\text{m}^3$
Max 24 Hour Average Air Concentration (Stack):	N/A $\mu\text{g}/\text{m}^3$

Exposure Units	Results (Stack)	Results (Fugitive)	ASSUMPTIONS			
			ED (years)	AT (years)	BW (kg)	Inh. Rate (m ³ /hr)
Cancer						
LADD _{pot} (mg/kg/day)	2.11E-04	N/A	33.00	78.00	80.00	0.61
LADC _{pot} (mg/m ³)	1.15E-03	N/A	33.00	78.00	NA	NA
Acute						
ADR _{pot} (mg/kg/day)	N/A	N/A	NA	1 day	80.00	0.61

Inhalation Comments:

Stack Parameter Data

Stack Height	10.00	m
Inside Stack Diameter:	0.10	m
Stack Gas Exit Velocity:	0.10	m/sec
Stack Gas Temperature:	293.00	K

Fugitive Parameter Data

Release Height:	N/A
Length of Release Opening:	N/A
Width of Release Opening:	N/A

Meteorological and Terrain Information:

Surrounding Land Use:	Rural
Terrain Height:	0.00 m
Distance to Residence of Interest:	100.00 m
Meteorological Class:	Full
Stability Class:	NA
Wind Speed:	NA

Downwash Information:

Facility Length:	NA m
Facility Width:	NA m
Facility Height:	NA m

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

Assessor: Mottl/HDJ

ENVIRONMENTAL RELEASES

Scenario#:5

Number of Release Sites: ■

Release Activity: USE2: Max ADR

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
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Total Releases:

■	■	■	■
(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:

■	■	■	■
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Per Site Release:

■	■	■	■
(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 5

Number of Sites: ■

RELEASE ACTIVITY:USE2:
Max ADR

SIC-CODE DESCRIPTION: POTW (Indust., includes POTWs which receive ind. disch.)

SIC-CODE (S): ■■■■■■

EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
90.00	■	0.98	9.80E-02	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER									
PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	288.00	123.84	78.18	66.05	0.34	0.79	1.25	1.48
ALL	10	39.60	13.29	7.76	7.57	2.47	7.37	12.63	12.95

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES						
Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
LADD _{pot}	7.18E-08	5.22E-07	mg/kg/day	0.00	0.00	mg/kg/day
LADC _{pot}	5.52E-06	4.02E-05	mg/L	0.00	0.00	mg/kg
Acute						
ADR _{pot}	3.00E-05	2.79E-04	mg/kg/day	0.00	0.00	mg/kg/day

SIC Code Comments:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

INHALATION EXPOSURE ESTIMATES (POST-TREATMENT)
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SCENARIO #: 5

RELEASE ACTIVITY:USE2: Max ADR

RELEASE DESCRIPTION:

METHOD OF CALCULATION: Screen3

EXPOSED POPULATION: Adult

Number of Sites:

■

Per Site Fugitive Release:

■

kg/site/day

Fugitive Release Days per Year:

■

days

% Removal via Fugitive Release:

0.00

%

Total Fugitive Release:

■

kg/yr

Max Annual Average Air Concentration
(Fugitive):

1.30

 $\mu\text{g}/\text{m}^3$ Max 24 Hour Average Air
Concentration(Fugitive):

420.00

 $\mu\text{g}/\text{m}^3$

Per Site Stack Release:

■

kg/site/day

Stack Release Days per Year:

■

days

% Removal via Stack Release:

0.00

%

Total Stack Release:

■

kg/yr

Max Annual Average Air Concentration (Stack):

0.00

 $\mu\text{g}/\text{m}^3$

Max 24 Hour Average Air Concentration (Stack):

0.00

 $\mu\text{g}/\text{m}^3$

Exposure Units	Results (Stack)	Results (Fugitive)	ASSUMPTIONS			
			ED (years)	AT (years)	BW (kg)	Inh. Rate (m ³ /hr)
Cancer						
LADD _{pot} (mg/kg/day)	N/A	1.01E-04	33.00	78.00	80.00	0.61
LADC _{pot} (mg/m ³)	N/A	5.50E-04	33.00	78.00	NA	NA
Acute						
ADR _{pot} (mg/kg/day)	N/A	7.69E-02	NA	1 day	80.00	0.61

Inhalation Comments:

Stack Parameter Data

Stack Height	10.00
Inside Stack Diameter:	0.10
Stack Gas Exit Velocity:	0.10
Stack Gas Temperature:	293.00

Fugitive Parameter Data

Release Height:	3.00	m
Length of Release Opening:	10.00	m
Width of Release Opening:	10.00	m

Meteorological and Terrain Information:

Surrounding Land Use:	Rural	
Terrain Height:	0.00	m
Distance to Residence of Interest:	100.00	m
Meteorological Class:	Full	
Stability Class:	NA	
Wind Speed:	NA	

Downwash Information:

Facility Length:	NA	m
Facility Width:	NA	m
Facility Height:	NA	m

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

Assessor: Mottl/HDJ

ENVIRONMENTAL RELEASES

Scenario#:6

Number of Release Sites

Release Activity: USE2: Max LADD

Release Description:	WATER	LANDFILL Non-sludge/Sludge	STACK	FUGITIVE
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Total Releases:

	(kg/yr)	(kg/yr)	(kg/yr)	(kg/yr)

Non-sludge/Sludge

Release Days/yr:

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Per Site Release:

	(kg/site/day)	(kg/site/day)	(kg/site/day)	(kg/site/day)

Remarks:

INITIAL REVIEW EXPOSURE REPORT

Chemical ID: P-17-0281

SIC-CODE BASED HUMAN AND AQUATIC EXPOSURES TO SURFACE WATER RELEASES

SCENARIO #: 6

Number of Sites: ■

RELEASE ACTIVITY:USE2:
Max LADD

SIC-CODE DESCRIPTION: POTW (Indust., includes POTWs which receive ind. disch.)

SIC-CODE (S): ■■■■■■

EXPOSED POPULATION: Adult

WWT REMOVAL (%)	RELEASE DAYS	PRETREATMENT RELEASE (kg/site/day)	POSTTREATMENT RELEASE (kg/site/day)	DWT (%)	BCF (L/kg)
90.00	1.	13.72	1.37	0.00	0.00

AQUATIC EXPOSURE ESTIMATES - SURFACE WATER									
PLANT TYPE	% ILE FACILITY	STREAM FLOW (MLD)				STREAM CONC. (µg/l)			
		Harmonic Mean	30Q5	7Q10	1Q10	Harmonic Mean	30Q5	7Q10	1Q10
ALL	50	288.00	123.84	78.18	66.05	N/A	N/A	N/A	N/A
ALL	10	39.60	13.29	7.76	7.57	N/A	N/A	N/A	N/A

DRINKING WATER AND FISH INGESTION EXPOSURE ESTIMATES						
Exposure Units	Drinking Water Results		Drinking Water Units	Fish Ingestion Results		Fish Ingestion Units
	50%	10%		50%	10%	
Cancer						
LADD _{pot}	7.18E-08	5.22E-07	mg/kg/day	0.00	0.00	mg/kg/day
LADC _{pot}	5.52E-06	4.02E-05	mg/L	0.00	0.00	mg/kg
Acute						
ADR _{pot}	N/A	N/A	mg/kg/day	N/A	N/A	mg/kg/day

SIC Code Comments: